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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,357	04/02/2004	Jia-Shyong Cheng	DEE-PT162	3272
3624	7590	08/30/2005	EXAMINER	
VOLPE AND KOENIG, P.C. UNITED PLAZA, SUITE 1600 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103			CHOWDHURY, TARIFUR RASHID	
			ART UNIT	PAPER NUMBER
			2871	
DATE MAILED: 08/30/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/817,357

Applicant(s)

CHENG ET AL.

Examiner

Tarifur R. Chowdhury

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04/02/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Specification*

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

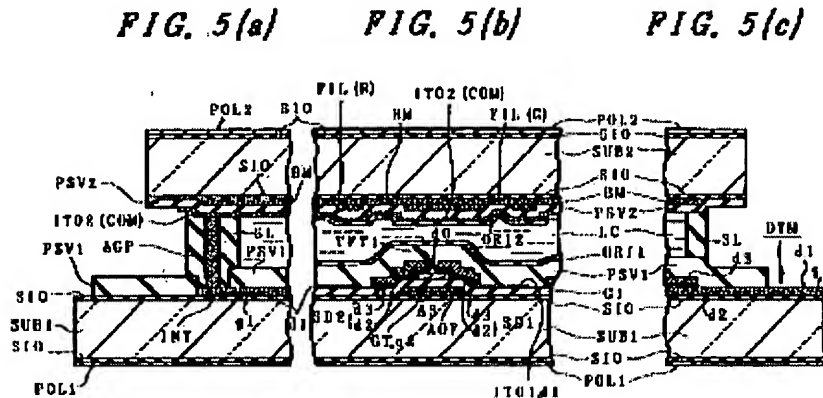
4. **Claims 1, 3, 5-9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al., (Suzuki), USPAT 5,739,880.**

5. Suzuki discloses and shows in Figs. 5(a)-5(c), a liquid crystal display with a narrow frame area, comprising;

- a first substrate (SUB1);
- a plural scan line metal layers (g1, g2) and plural data line metal layers (d1, d2) formed on the first substrate;
- a second substrate (SUB2) attached to the first substrate by applying a seal (SL) at a periphery of one of the first substrate and the second substrate; and

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- a black matrix (BM) or color filter (FIL) (applicant's opaque layer) formed on the second substrate at the inside of the seal,



wherein the scan line metal layers and the data line metal layers extend to the outside of the seal, and overlap with each other to form an integrated black matrix on the first substrate, which overlaps with the opaque layer on the second substrate.

Accordingly, claims 1, 3 and 9 are anticipated.

As to claims 5 and 6, Suzuki also discloses that the black matrix layer is made of a resin containing carbon black or black organic pigment (col. 10, lines 1-3).

As to claims 7 and 8, Suzuki also shows in Figs. 5(a)-5(c) that a color filter layer (FIL) having red, green and blue filters are formed on the second substrate (SUB2).

As to claim 11, Suzuki also discloses that the integrated black matrix comprises an amorphous silicon layer (col. 8, lines (39-44)).

6. **Claims 1, 3, 7-9, 11, 12, 14, 18-20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Sasuga et al., (Sasuga), USPAT 5,432,626.**

7. Sasuga discloses and shows in Fig. 19, a liquid crystal display with a narrow frame area, comprising:

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- a first substrate (SUB1);
- a plural scan line metal layers (g1, g2) and plural data line metal layers (d1, d2) formed on the first substrate;
- a second substrate (SUB2) attached to the first substrate by applying a seal (SL) at a periphery of one of the first substrate and the second substrate; and
- an opaque layer (BM) formed on the second substrate (SUB2) at the inside and outside of the seal (SL);

wherein the scan line metal layers and the data line metal layers extend to the outside of the seal, and overlap with each other to form an integrated black matrix on the first substrate, which overlaps with the opaque layer on the second substrate.

Accordingly, claims 1, 3, 9, 12, 14 and 20 are anticipated.

As to claims 7, 8, 18 and 19, Sasuga also shows in Fig. 19 that a color filter layer (FIL) having red, green and blue filters are formed on the second substrate (SUB2).

As to claims 11 and 22, Sasuga also discloses that the integrated black matrix comprises an amorphous silicon layer (col. 7, lines 56-63).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**10. Claims 2, 10, 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki or Sasuga in view of Lee et al., (Lee), USPAT 6,879,369.**

11. As to claims 2 and 13, Suzuki or Sasuga differs from the claimed invention because they do not explicitly disclose that the liquid crystal display is manufactured by a one drop fill (ODF) process.

Lee discloses (col. 1, lines 62-63) that ODF process can simplify the fabrication process of a liquid crystal display.

Lee is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use ODF process to fabricate a liquid crystal display.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to fabricate the liquid crystal display of Suzuki or Sasuga with ODF process to simplify the fabrication process, as per the teachings of Lee.

As to claims 10 and 21, Suzuki or Sasuga differ from the claimed invention because they do not explicitly disclose that a UV light solidifies the seal.

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Lee discloses the use of UV light to solidify the seal. He further discloses that such a process reduce the liquid crystal pollution problem (abstract).

Lee is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use seal that is solidified by a UV light.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of Suzuki or Sasuga by solidifying the seal using UV light for advantages such as reduced liquid crystal pollution, as per the teachings of Lee.

**12. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasuga in view of Suzuki.**

13. Sasuga differs from the claimed invention because he does not explicitly disclose that the black matrix (applicant's opaque layer) is one of black resin and a color resin.

Suzuki discloses a liquid crystal display device wherein the black matrix is made one of a colored organic resin of low reflectivity (col. 3, lines 27-28). He also discloses that such a black matrix solves the problem of the drop in display quality (col. 3, lines 27-36).

Suzuki is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use an opaque layer made of colored resin.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use black matrix that is made of a colored resin in the device of Sasuga for advantages such as improved display quality, as per the teachings of Suzuki.

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**14. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki or Sasuga and in view of Colgan et al., (Colgan), USPAT 6,057,903.**

15. Suzuki or Sasuga differ from the claimed invention because they do not explicitly disclose that the opaque layer is a mixture of a metal and an oxide of the metal.

Colgan discloses liquid crystal display device having a black matrix (applicant's opaque layer). Colgan also discloses that using a black matrix layer that is a mixture of chromium and chromium oxide is advantageous since it increases display contrast ratio (col. 9, lines 13-20).

Colgan is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use an opaque layer that is a mixture of a metal and an oxide of the metal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use an opaque layer that is a mixture of a metal and an oxide of the metal in the display device of Suzuki or Sasuga for advantages such as improved display quality, as per the teachings of Colgan.

Accordingly, claims 4 and 15 would have been obvious.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

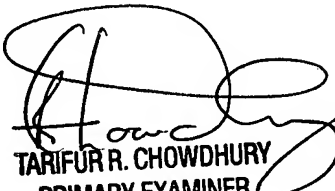


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC  
August 27, 2005



TARIFUR R. CHOWDHURY  
PRIMARY EXAMINER